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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/648,111 | 08/25/2000 | Kwang-Jo Hwang | 3430-0131P | 5562 |
| 7590 | 09/20/2005 | | EXAMINER | |
| Birch Stewart Kolasch & Birch LLP PO BOX 747 Falls Church, VA 22040-0747 | | | RICHARDS, N DREW | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2815 | |
| DATE MAILED: 09/20/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------|-----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/648,111 | HWANG, KWANG-JO |
| | Examiner | Art Unit |
| | N. Drew Richards | 2815 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 July 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11 and 13-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-11 and 13-31 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 August 2000 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-11 and 13-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claims 1, 22, 30 and 31 have been amended to contain the limitation of the etching the treated portion of the metal layer being the first step of etching performed in the claimed sequence. This limitation is not explicitly or implicitly found in the specification as originally filed. Nowhere in the specification as originally filed is another etching step explicitly precluded from being performed in the claimed sequence. The recited limitation is effectively a negative limitation that disclaims any other etching step be performed. The originally filed specification does not provide support for this limitation. Thus, this limitation is new matter. Claims 2-11, 13-21 and 23-29 all depend from claims 1, 22, 30 or 31 and as such are similarly rejected.

3. Claims 1-11 and 13-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 1, 22, 30 and 31 have been amended to contain the limitation of the etching the treated portion of the metal layer being the first step of etching performed in the claimed sequence. The specification does not enable this limitation. For instance, one of ordinary skill in the art would recognize that an etching step is previously performed in the claimed sequence in forming a photoresist pattern. As is well known in the art, photoresists are formed on the entirety of a substrate surface and then portions are removed to form a photoresist "pattern." This removal step is an etching step, most commonly a wet-etching step. Thus, one of ordinary skill in the art would recognize that in "forming a photoresist pattern" applicant has necessarily performed an etching step. The specification does not enable how one of ordinary skill in the art would form the photoresist pattern without an etching step and thus the skilled artisan would not be able to make the invention as claimed.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 2, 5-9, 11, 13, 15, 16, 20-22, 24 and 28-31 are rejected over Hirano in view of Chen as explained in the prior Office Action.

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6. Claims 10, 17-19 and 25-27 are rejected over Hirano and Chen in view of Ye et al. as explained in the prior Office Action.

7. Claims 3, 4, 14 and 23 are rejected over Hirano and Chen in view of Muraguchi et al. as explained in the prior Office Action.

8. For the art rejections above, it is noted that the depositing a metal layer, forming a photoresist pattern, treating the exposed metal layer, and etching the treated portion of the metal layer are performed sequentially in the process of Hirano with Chen. Further, it is noted that, in using the treatment and etching step of Chen in the process having a single metal layer of Hirano, no previous step of etching the upper metal layer occurs and thus the etching the metal layer is the first step of etching performed in the sequence.

Response to Arguments

9. Applicant's arguments with respect to claims 1-11 and 13-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (571) 272-1736. The examiner can normally be reached on Monday-Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


NDR


Tom Thomas
TOM THOMAS
SUPERVISORY PATENT EXAMINER